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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hisashi Amaya

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EXAMINER

ROE, JESSEE RANDALL

ART UNIT

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1793

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/798,855	Applicant(s) AMAYA ET AL.	
	Examiner Jessee Roe	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the Claims

Claims 1-8 and 13-20 are pending wherein claims 1-8 and 13-20 are amended and claims 9-12 are canceled.

Status of Previous Rejections

The previous rejection of claims 1-8 and 13-20 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn in view of the Applicant's amendment to the claims. The previous rejection of claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over Schumacher (US 5,089,067) is withdrawn in view of the Applicant's arguments and amendment to the claims. The previous rejection of claims 13-20 as being unpatentable over Schumacher (US 5,089,067) alone, or alternatively with evidence from Yamane et al. (JP 09-041093) is withdrawn in view of the Applicant's arguments and amendment to the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Miyata et al. (US 5,858,128).

In regards to claims 1 and 3, Miyata et al. ('128) discloses a martensitic stainless steel alloy pipe that would have utility in applications such as petroleum and natural gas pipelines having a composition relative to that of the instant invention as shown in the table on the below (abstract and col. 1, lines 8-11).

Element	From Instant Claims (weight percent)	Miyata et al. ('128) (weight percent)	Overlap (weight percent)
C	0.02 – 0.10	0 – about 0.03	0.02 – about 0.03
Si	0.05 – 1.0	0 – about 0.50	0.05 – about 0.50
Mn	0.05 – 0.95	about 0.5 – 3.0	about 0.5 – 0.95
P	0 – 0.03	0 – about 0.03	0 – 0.03
S	0 – 0.01	0 – about 0.01	0 – 0.01
Cr	9 – 15	about 10 – 14	about 10 – 14
Ni	1.0 – 4.5	about 0.2 – 2.0	1.0 – 2.0
Al	0 – 0.05	0	0
N	0 – 0.1	0 – about 0.03	0 – about 0.03
Cu	0.05 – 5	about 0.2 – 1.0	about 0.2 – 1.0
Fe	balance	balance	balance

The Examiner notes that the disclosed amounts of carbon, silicon, manganese, phosphorus, sulfur, chromium, nickel, aluminum, nitrogen, and copper of the martensitic stainless steel alloy disclosed by Miyata et al. ('128) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed composition from the composition disclosed by Miyata et al. ('128) because Miyata et al. ('128) discloses the same utility (martensitic stainless steel alloy) throughout the disclosed ranges.

With respect to the hardness range of 30 – 45 HRC and "the amount of carbides in grain boundaries of the prior austenite is not more than 0.5 volume %." in claims 1

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and 3, the Examiner notes that Miyata et al. ('128) discloses substantially the same composition in addition to forming into a pipe (plastically processed history) (abstract and col. 2, lines 29-38). Therefore, these properties would be expected. MPEP 2112.01 I.

With respect to the formula $0.2 \leq \text{Mo} + \text{Cu}/4 \leq 5$ of claims 1 and 3, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Saklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685, 688. It would have been obvious to one of ordinary skill in the art to select the desired amounts of copper and molybdenum from the ranges disclosed by Miyata et al. ('128) such that the formula would be satisfied because Miyata et al. ('128) discloses the same utility throughout the disclosed ranges.

Still regarding claim 3, Miyata et al. ('128) discloses up to 0.3 weight percent titanium, vanadium, and niobium, which overlaps the ranges of 0.005 to 0.5 weight percent of at least one of titanium, vanadium, and niobium as instantly claimed (col. 4, lines 1-17).

Claims 1-8 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. (US 5,716,465).

In regards to claims 1-8 and 13-20, Hara et al. ('465) discloses a martensitic

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stainless steel that would have utility in oil and gas wells having a composition relative to that of the instant invention as shown in the table below (abstract and col. 1, lines 12-48).

Element	From Instant Claims (weight percent)	Hara et al. ('465) (weight percent)	Overlap (weight percent)
C	0.02 – 0.10	0.005 – 0.035	0.02 – 0.035
Si	0.05 – 1.0	0 – 0.50	0.05 – 0.50
Mn	0.05 – 0.95	0.1 – 1.0	0.1 – 0.95
P	0 – 0.03	0 – 0.03	0 – 0.03
S	0 – 0.01	0 – 0.005	0 – 0.005
Cr	9 – 15	8 – 13	9 – 13
Ni	1.0 – 4.5	1.5 – 5.0	1.5 – 4.5
Al	0 – 0.05	0 – 0.06	0 – 0.05
N	0 – 0.1	0 – 0.01	0 – 0.01
Cu	0.05 – 5	1.0 – 4.0	1.0 – 4.0
Mo	0.05 – 5	1.0 – 3.0	1.0 – 3.0
Fe	balance	balance	balance

The Examiner notes that the disclosed amounts of carbon, silicon, manganese, phosphorus, sulfur, chromium, nickel, aluminum, nitrogen, copper and molybdenum of the martensitic stainless steel alloy disclosed by Hara et al. ('465) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed composition from the composition disclosed by Hara et al. ('465) because Hara et al. ('465) discloses the same utility (martensitic stainless steel alloy) throughout the disclosed ranges.

With respect to the hardness range of 30 – 45 HRC and “the amount of carbides in grain boundaries of the prior austenite is not more than 0.5 volume %.” in claims 1-8 and 13-20, the Examiner notes that Hara et al. ('465) discloses substantially the same

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composition in addition to hot rolling and cold rolling to form a pipe (plastically processed history) (abstract and col. 2, lines 12 - 23). Therefore, these properties would be expected. MPEP 2112.01 I.

With respect to the formulas $0.2\% \leq \text{Mo} + \text{Cu}/4 \leq 5\%$ and $0.55\% \leq \text{Mo} + \text{Cu}/4 \leq 5\%$ of claims 1-8 and 13-20, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Saklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685, 688. It would have been obvious to one of ordinary skill in the art to select the desired amounts of copper and molybdenum from the ranges disclosed by Hara et al. ('465) such that the formula would be satisfied because Hara et al. ('465) discloses the same utility throughout the disclosed ranges.

Still regarding claims 3-4, 7-8, 15-16 and 19-20, Hara et al. ('465) discloses adding 0.005 to 0.1 weight percent titanium in order to inhibit grain growth and the deterioration of toughness, which overlaps the range of 0.005 to 0.5 weight percent titanium as claimed in the instant invention (abstract and col. 5, lines 24-35).

Still regarding claims 5-6, 7-8, 17-18 and 19-20, Hara et al. ('465) discloses adding 0.001 to 0.02 weight percent calcium to bring inclusions to a spherical form, which overlaps the range of 0.0003 to 0.005 weight percent calcium as claimed in the instant invention (abstract and col. 5, lines 37-43).

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With respect to the recitation “the martensitic stainless steel having a structure resulting from one of quenching, air cooling, quenching followed by a 400°C or lower tempering treatment, or air cooling followed by a 400°C or lower tempering treatment” in claims 13-20, Hara et al. ('465) discloses air cooling (Table 2).

With respect to the recitation “and the amounts of Cu and Mo effective to form a sulfide layer on a formed chromium oxide layer” in claims 13-20, the Examiner asserts that Hara et al. ('465) discloses amounts of copper and molybdenum effective to form this sulfide layer because Hara et al. ('465) discloses the same or a substantially similar composition. MPEP 2112.01 I.

With respect to the recitation “the sulfide layer formed as a result of the martensitic stainless steel being subjected to a sulfur-containing environment” in claims 13-20, Hara et al. ('465) discloses the same or a substantially similar composition and subjecting the composition to a sulfide-containing atmosphere (col. 6, lines 39-50). Therefore, formation of the sulfide layer would be expected. MPEP 2112.01 I.

Response to Arguments

Applicant's arguments with respect to claims 1-8 and 13-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JR

/John P. Sheehan/
Primary Examiner, Art Unit 1793